

**Agenda Item:** 8-4  
**Meeting Dates:** April 7 and 8, 2004

## **SURFACE STORAGE INVESTIGATIONS STATUS REPORT**

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**Summary:** This briefing will inform the California Bay-Delta Authority on the status of the five surface storage projects being conducted by the Department of Water Resources (DWR), the U.S. Bureau of Reclamation (USBR), and many local agencies.

**Recommended Action:** This is an informational item only. No action will be taken.

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### **Background**

The *Surface Storage Progress Report*, a working draft document, has been prepared by DWR, in cooperation with USBR, and the Authority staff in order to respond to stakeholder inquiries about the status of the five surface storage projects discussed in the CALFED Program Record of Decision. The Progress Report will be handed out at the meeting. While all five of the projects have the potential to provide important benefits for the State and local regions, there is not adequate committed State or Federal funding to allow planning and feasibility studies for all five of the projects to be completed. The briefing will focus on important storage issues and will help the Authority prepare to make a recommendation in June 2004 on the Storage Program Plan.

Two key areas will be highlighted. First, this briefing will summarize the key issues, findings, and accomplishments discussed in the report including the In-Delta Storage Program State Feasibility Study draft reports are currently under public review and comment.

The second objective of this briefing is to discuss how best to address the question of project prioritization. All five of the projects can provide important benefits for the State and local regions; however, there currently is not enough committed State or Federal funding to allow all five of the projects to progress at their current schedule. Addressing how the storage projects spend their limited resources in future years will become an important component of next year's Storage Program Plan. The Surface Storage Program staff will outline a conceptual plan. Ultimately, the discussions of these issues will lead to an improved Storage Program Plan for FY 04/05. The Bay-Delta Public Advisory Committee was briefed on this topic on March 11, 2004.

**Attachment**

Attachment 1 - Draft Executive Summary In-Delta Storage Program State  
Feasibility Study (Bound separately.)  
[http://calwater.ca.gov/Programs/Storage/InDeltaStorageReports\\_2003/Executive\\_Summary/Draft\\_In-Delta\\_Executive\\_Summary\\_1-30-04.pdf](http://calwater.ca.gov/Programs/Storage/InDeltaStorageReports_2003/Executive_Summary/Draft_In-Delta_Executive_Summary_1-30-04.pdf)

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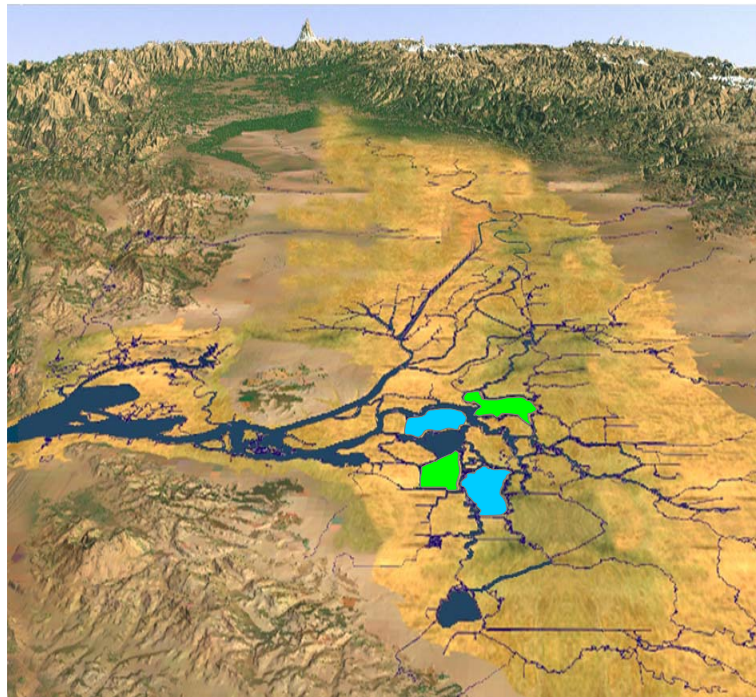
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# **DRAFT EXECUTIVE SUMMARY IN-DELTA STORAGE PROGRAM STATE FEASIBILITY STUDY**

*INTEGRATED STORAGE INVESTIGATIONS*



**Division of Planning and Local Assistance  
Department of Water Resources  
January 2004**

## ORGANIZATION

### FOREWORD

**We acknowledge the technical assistance provided by U.S. Bureau of Reclamation in carrying out the role of federal lead agency for the CALFED Integrated Storage Investigations. U.S. Bureau of Reclamation will continue to provide technical assistance through the review of the State Feasibility Study reports and DWR will work with U.S. Bureau of Reclamation to incorporate comments and recommendations in the final reports.**

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## List of Feasibility Study Reports

1. DWR, January 2004, Draft Executive Summary.
2. DWR, January 2004, Draft Summary Report.
3. DWR, December 2003, Draft Report on Operations.
4. DWR, December 2003, Draft Report on Water Quality Investigations.
5. DWR, July 2003, Draft Report on Environmental Evaluations.
6. DWR, January 2004, Draft Report on Economic Evaluations.
7. DWR, July 2003, Draft Engineering Investigations Summary.
8. URS Corporation, June 2003, Embankment Design Analysis, Draft Report.
9. URS Corporation, June 2003, Flooding Analysis, Draft Report.
10. URS Corporation, June 2003, Seismic Analysis, Draft Report.
11. URS Corporation, April 2003, Borrow Area Geotechnical Draft Report.
12. DWR and URS Corporation, July 2003, Integrated Facilities Engineering Design and Analyses, Draft Report.
13. URS Corporation, June 2003, In-Delta Storage Program Earthwork Construction Cost Estimate, Draft Report.
14. URS Corporation, June 2003, In-Delta Storage Program Integrated Facilities Structures Construction Cost Estimate, Draft Report.
15. URS Corporation, June 2003, In-Delta Storage Program Risk Analysis, Draft Report.
16. DWR January 2003, Results of Geologic Exploration Program, Final Report.
17. DWR January 2003, Results of Laboratory Testing Program, Final Report.

**Please submit comments on Feasibility Study reports review to:**

U.S. mail to: Jeremy Arrich DWR, DPLA PO Box 942836 Sacramento, CA, 94236-0001	Other mail or delivery to: Jeremy Arrich DWR, DPLA 901 P Street, Room 213A Sacramento, CA 95814	Email to: <a href="mailto:arrich@water.ca.gov" style="color: blue; text-decoration: underline;">arrich@water.ca.gov</a>
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# Draft Executive Summary

## 1.0 Introduction

The CALFED Bay-Delta Program Record of Decision (ROD), completed in August 2000, outlined a broad framework of actions to restore ecological health and improve water management for beneficial uses of the San Francisco Bay/Sacramento - San Joaquin Delta system. Among a variety of other integrated actions, the ROD directed the Department of Water Resources and U.S. Bureau of Reclamation to evaluate five surface storage proposals, including the In-Delta Storage Project, and to report on their ability to contribute to Bay-Delta solutions.

Based on initial work completed by DWR and Reclamation, in June 2002 the Bay-Delta Public Advisory Committee recommended that Bay-Delta Agencies complete additional evaluations and address several outstanding issues before considering implementation of the In-Delta Storage Project. This Draft State Feasibility Study reports the findings of this additional work. DWR presents these findings as a neutral technical evaluator of the costs, benefits, impacts, and uncertainties associated with a publicly owned In-Delta Storage Project. This report summarizes project evaluations conducted by DWR since June 2002, including:

In 2001, the California Department of Water Resources and Bay-Delta Agencies (formerly CALFED agencies) with technical assistance from the U.S. Bureau of Reclamation began a joint planning study to evaluate the Delta Wetlands Project and other in-Delta storage options. This study, completed in May 2002, concluded that the project concepts proposed by Delta Wetlands were generally well planned. However, design modifications and further evaluations were needed before considering public ownership of the project.

- Studies of potential project benefits and effects
- Project cost analyses
- Engineering feasibility and risk analysis
- Revised project operations that address drinking water quality concerns, especially organic carbon

Technical assistance through reviews of the State Feasibility Study draft reports was provided by the U.S. Bureau of Reclamation. Before DWR can recommend appropriate next steps for the In-Delta Storage Project proposal, it is essential that all stakeholders, including potential project participants and affected parties, review the information provided in this draft report and provide feedback on the value of the benefits the project might provide relative to its costs and impacts.

The public will have opportunities to comment during the 30-calendar day public review period. The project Team will also sponsor two public workshops to answer stakeholder questions, and will provide briefings as requested.

## 2.0 Project Description

The In-Delta Storage Project would provide capacity to store approximately 217,000 acre-feet of water in the south Delta for a wide array of water supply, water quality and ecosystem benefits. The project would include two storage islands (Webb Tract and Bacon Island) and two habitat islands (Holland Tract and Bouldin Island), similar to that proposed by Delta Wetlands over a decade ago, but would also include:

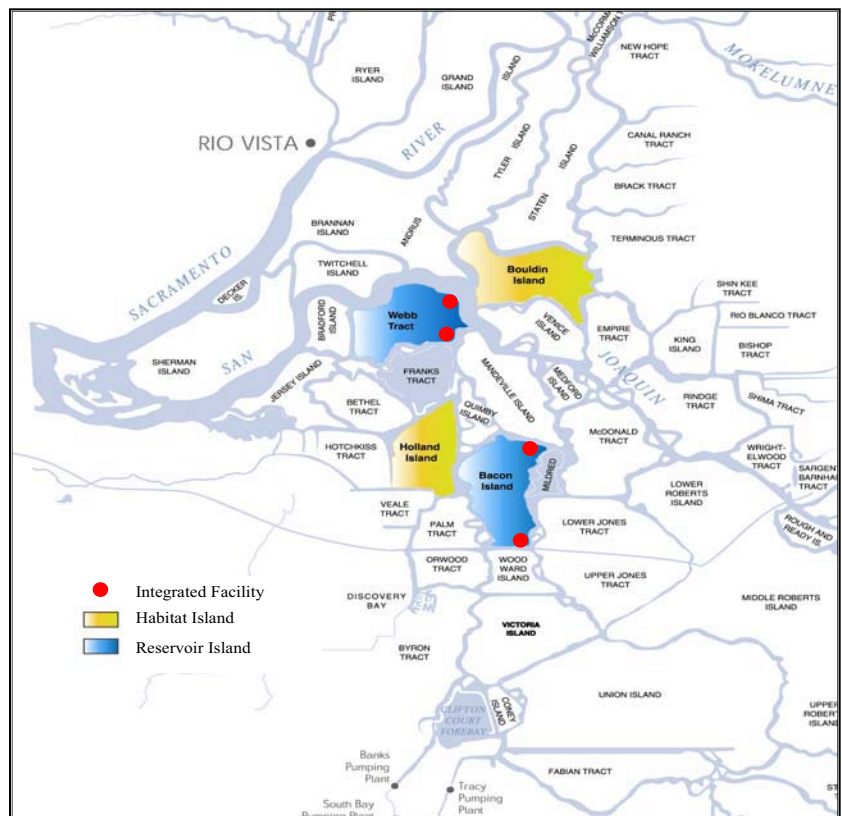
- New embankment design
- Consolidated inlet and outlet structures
- New project operations
- Revised Habitat Management Plans

Location of storage and habitat islands and inlet/outlet control structures (labeled as integrated facilities) in the Delta is shown in Figure 1.

## 3.0 Potential Project Benefits

The In-Delta Storage Project could provide a variety of benefits and contribute to meeting each of CALFED's four objectives for water supply reliability, water quality, ecosystem restoration, and levee system integrity.

Due to its strategic location in the Delta, In-Delta Storage could respond quickly to accommodate real time operational needs and provide a significant amount of water that could be used on short notice for export through the south Delta pumps, or release for real time Delta outflow, water quality and fisheries flows. This ability to respond quickly to real time conditions cannot be supplied by upstream storage facilities because that water requires greater travel time to reach the Delta.



**Figure 1: In-Delta Storage Project Location Map**

The In-Delta Storage Project could provide a wide variety of multiple benefits:



- **Urban Supply** – The project could produce additional water deliveries to urban water users (modeled as SWP/CVP, but could be any urban water user).
- **Agricultural Supply** – The project could produce additional water deliveries for agricultural use (modeled as SWP/CVP, but could be any agricultural water user).
- **CVPIA Level 4 Refuge Supply** – In-Delta Storage could provide water for supplies (in addition to Level 2 refuge supply) to meet Level 4 refuge demand if Delta export facilities have available capacity. This would benefit CVPIA fish, wildlife, and associated habitats in the Central Valley.
- **Environmental Water Account (EWA)** – In-Delta Storage Project could provide water needed to support the EWA program, enhancing the EWA agencies ability to respond to real-time fisheries needs and would eliminate the need to purchase a substantial portion of water needed by EWA each year.
- **Ecosystem Restoration Program (ERP) Delta Flows** – Releases from In-Delta Storage could help meet spring pulse flows proposed in the ERP. The project could also provide additional water quality and aquatic habitat improvements by releasing carryover water saved in island storage. This water could be released at strategic times during fall and winter for environmental benefit.
- **Operational Flexibility** – The project could improve the operational flexibility of the SWP and the CVP. The project’s strategic location within the Delta provides enhanced flexibility in responding to short-term operational needs resulting in greater environmental protection and water supply reliability. Improved flexibility also includes contribution to D1641 Requirements and increased carryover storage as explained as follows.

*Contribution to D1641 Requirements* – Although there are no additional D1641 requirements imposed on In-Delta Storage operations, coordination with the SWP/CVP is required under the CUWA/DW agreement. With this coordination both the SWP and CVP would benefit, because the In-Delta Storage Project could make water available for D1641 more quickly and efficiently than releases from upstream reservoirs.

*Increased Carryover Storage* – Project operations could result in additional system-wide carryover storage that could benefit the cold water pool, recreation and improve the reliability of other project deliveries.

- **Water Quality (Salinity) Improvements** – The project could help reduce salinity intrusion by making releases of fresh water into the Delta. Also, it could improve export water quality by storing water when Delta inflow quality is good and salinity is low.

- **Wildlife Habitat Improvements** – The project would provide enhanced wildlife habitat, especially on Bouldin Island and Holland Tract, the habitat islands.
- **Interim Storage for Water Transfers** – During times when there is unused storage capacity in the reservoir islands, water from upstream areas could be moved into In-Delta Storage on a temporary basis until pumping capacity at the south Delta export pumps becomes available.
- **Flood Damage Reduction** – Diversions to the reservoir islands would occur during high flow season, lowering flood levels in adjoining channels and reducing the risk of flooding to neighboring islands. Storage space could be increased by releasing water from the reservoirs before the expected flood peak arrives.
- **Seismic Stability** – The embankments would withstand higher magnitude earthquakes compared to existing levees, reducing the chance of embankment failure and associated saltwater inflow from the Bay. In case of a seismic failure of adjoining islands, the reservoirs could release fresh water to repel salt water.
- **Recreational Benefits** – Recreational benefits of the project islands could include hunting, fishing, hiking, biking, and interpretative experiences.

#### 4.0 Sample Operational Scenarios

While In-Delta Storage could be operated in a wide variety of ways for differing benefits, no specific operational scenario has been chosen by potential beneficiaries. Three sample operational scenarios, summarized in Table 1, provide examples of the types and magnitudes of potential benefits possible from the project:

- **Sample Scenario 2** shows one operational scenario with an emphasis on water supply.
- **Sample Scenario 3** shows one operational scenario with an emphasis on water supply and the EWA.
- **Sample Scenario 4** shows one operational scenario with an emphasis on water supply, EWA, and ERP Delta flows.

Table 1 shows estimated annual water quantity benefits (deliveries) during both dry periods and long-term average conditions. For these scenarios, neither organic carbon constraints nor circulation benefits have been applied. Also, the most restrictive biological opinion condition, which would occur when the Fall Midwater Trawl Abundance Index (FMWT) for delta smelt is less than 239, was not modeled because of limited historical information. These constraints and benefits are modeled and discussed in detail under studies 4a, 4b and 4c in the Draft Summary Report. For sample scenario 2, operated primarily for urban and agricultural water supply, long-term annual average deliveries would total about 124 taf. By adding an EWA demand in sample scenario 3, long-term annual average deliveries would total about 129 taf. By further adding an ERP demand in sample scenario 4, long-term annual average deliveries would total about 136 taf. The addition of EWA and ERP demands allow total project deliveries to increase, but

**Table 1: Potential Project Benefits from Sample Operational Scenarios**

Benefit Category	Sample Scenario 2* Water Supply (D1641 & D1643)			Sample Scenario 3* Water Supply/EWA (D1641 & D1643)			Sample Scenario 4* Water Supply/EWA/ERP (D1641 & D1643)		
	Annual Improvement (TAF)			Annual Improvement (TAF)			Annual Improvement (TAF)		
	Dry Period	Long-term		Dry Period	Long-term		Dry Period	Long-term	
	Urban Supply	35.3	43.0		31.6	45.4		20.4	32.3
Agricultural Supply	20.5	66.3		15.9	41.6		12.5	39.6	
EWA	--	--		10.3	31.2		9.7	36.7	
ERP	--	--		--	--		14.9	15.7	
CV/PIA Level 4 refuge supply	5.5	14.6		3.4	11.0		3.4	11.7	
<b>Total Water Quantity Benefits (TAF)</b>	<b>61.3</b>	<b>123.9</b>		<b>61.2</b>	<b>129.2</b>		<b>60.9</b>	<b>136.0</b>	
Benefits common to all operational scenarios (not evaluated in terms of water supply):	Operational flexibility			Seismic stability					
	Water quality improvements			Contribution to Delta requirements (D1641)					
	Wildlife habitat improvements			System-wide carryover storage					
	Storage for water transfers			Recreational opportunities					
	Flood damage reduction								
<b>Note:</b> These sample scenarios are for illustrative purposes only. Many other operational scenarios, with different assumptions and emphases, are possible. For example, in Scenario 4, when the organic carbon constraint is applied with circulation, the long-term project yield is reduced by 10 taf (see Study 4b in Draft Summary Report). Also, when the most restrictive biological condition criteria (FMW/T<239) is applied, the long-term project yield is reduced by 20 taf (see Study 4c in Draft Summary Report).									

cause some reduction in urban and agricultural water deliveries. Also, included in Table 1 are additional benefits common to all scenarios not quantified in terms of water supply.

Many other operational scenarios are possible. Each sample scenario in Table 1 includes D1641 and D1643 (operational requirements specifically for In-Delta Storage). Each sample scenario includes CVPIA level 4 refuge demand for modeling purposes, but could be replaced by other statewide water demands.

Other storage projects being studied for the Bay-Delta Program have not yet progressed far enough in the process to have their own assigned operational requirements similar to D1643 for In-Delta Storage. It is interesting to note that the In-Delta Storage Project could deliver about 100,000 acre-feet more benefits if it was not required to operate under the D1643 constraints.

#### 4.1 Assessment of Project Costs

The Project Team estimated both capital and annual costs for the project:

- **Capital Cost** – The project capital cost analysis focused both on identifying suitable construction methods as well as developing State feasibility level cost estimates. The total capital cost of the project, including construction, engineering, legal, administration, permitting, land acquisition, relocations, and allowance for contingencies is estimated to be approximately \$774 million.
- **Annual Cost** – The equivalent annual cost, approximately \$60 million assuming 50-year project life and a 6 percent interest rate, is the sum of three elements:
  1. Capital recovery cost – amortized total capital cost.
  2. Property tax loss – loss of revenues due to loss of agricultural lands and in-lieu payment.
  3. Recurring annual costs – operation and maintenance costs as well as energy costs incurred for the project operations of the In-Delta Storage facilities. These costs do not include additional costs associated with delivering water supply to a user.

#### 4.2 Assessment of Project Benefits

Based on a conservative preliminary assessment of the example Sample Scenarios described in Table 1, the average annual water supply benefits produced by the In-Delta Storage Project would be valued at approximately \$23 to 26 million. An additional \$2 million in annual benefits would be associated with the recreation, flood damage reduction and avoided levee maintenance provided by the project. Details of this preliminary benefits assessment are described in Chapter 7 of the Draft Summary Report. It should be noted that these estimates are extremely sensitive to assumptions about the future cost and availability of regional water management options (e.g., conservation, wastewater recycling, groundwater reclamation etc.) and the value water users place on water system reliability. DWR intends to review these assumptions with potential beneficiaries and economic experts before finalizing these estimates.

In addition, many of the benefits listed in Table 1, such as operational flexibility, water quality improvements, wildlife and habitat improvements and seismic stability, have not yet been quantified. Before total project benefits and cost can be compared, value must be assigned to these benefits. All potential project participants, including the State, must use judgment to estimate the value of the benefits the In-Delta Storage Project might provide and determine if those benefits justify the project costs. The Department will work with the Bay-Delta Public Advisory Committee and the California Bay-Delta Authority to gather input from interested parties before completing this benefits assessment.

## **5.0 Environmental Effects and Mitigation Measures**

Environmental effects of the proposed project have been evaluated and mitigation measures have been identified to reduce these impacts. During preparation of additional environmental documents, consultations with regulatory and resource agencies would be conducted as needed to cover proposed changes to the project description and to update environmental information in permits and authorizations issued for the Delta Wetlands Project. A summary of the key environmental resource categories follows:

- **Aquatic resources** – River side embankment work could eliminate some of the shallow water habitat. This habitat could be replaced at other sites. Consultation and coordination with fish and wildlife agencies would help develop mitigation measures.
- **Listed or sensitive fish species** – Construction impact mitigation measures, operating rules and state-of-the-art fish screens are proposed and would be refined to minimize effects to aquatic species. These measures would be developed and refined in consultation with the fishery agencies when design, operation and construction details are developed.
- **Water quality** – A water quality management plan prevents releasing water that would degrade the beneficial uses of Delta water. Measures to avoid and mitigate construction impacts would be developed in consultation with the water quality agencies when design, operation and construction details are developed.
- **Recreation activities** – Mitigation measures to replace and enhance recreational uses at the project would be included to help satisfy recreational needs in the Delta.
- **Cultural resources** – A cultural resources agreement would be the basis for re-initiating National Historic Preservation Act consultations and conducting additional surveys and data recovery excavations.
- **Agricultural lands** – The feasibility of acquiring agricultural easements to mitigate impacts to agricultural lands is being investigated. The project habitat islands would contain some lands for wildlife-friendly agricultural uses.

- **Special status plants** – Mitigation measures would include protecting plants from construction and recreational impacts, locating facilities to avoid plants, transplanting plants to protected areas and protecting, enhancing and creating special plant habitat off-site.
- **Special status wildlife** – Habitat lost by storing water on the reservoir islands would be mitigated by replacing it on the project habitat islands.
- **Hazardous materials** – Hazardous materials would be removed or treated before the islands are used for either reservoir storage or habitat purposes.

## **6.0 Engineering Feasibility and Risk Analysis**

To provide a project with appropriate levels of safety for potential public ownership, DWR conducted engineering evaluations to consider modifications to the original Delta Wetlands proposal to reduce risk and uncertainty for project construction and operation. These modifications to reduce risk have increased the project costs over those estimated for the Delta Wetlands proposal. This State Feasibility Study shows that the project facilities can be constructed at an acceptable level of risk. The DWR Independent Board of Consultants reviewed and approved the project engineering design and risk analysis. Following are key technical issues that were considered during the evaluations.

### **6.1 Embankment Design**

The In-Delta Storage re-engineered project embankments were evaluated under a variety of conditions including post-construction, normal operations and extreme events (flood and earthquakes). The recommended embankment configuration includes a combination of two embankment options to meet recommended factors of safety: (1) rock berm, and (2) bench options (Figure 2). The bench option, chosen for about 4 percent of each island's perimeter, would be used in areas where the slough is deep, the slough-side embankment slope is too steep to adequately place rock, or where the placement of rock may block a portion of channel and impact navigation.

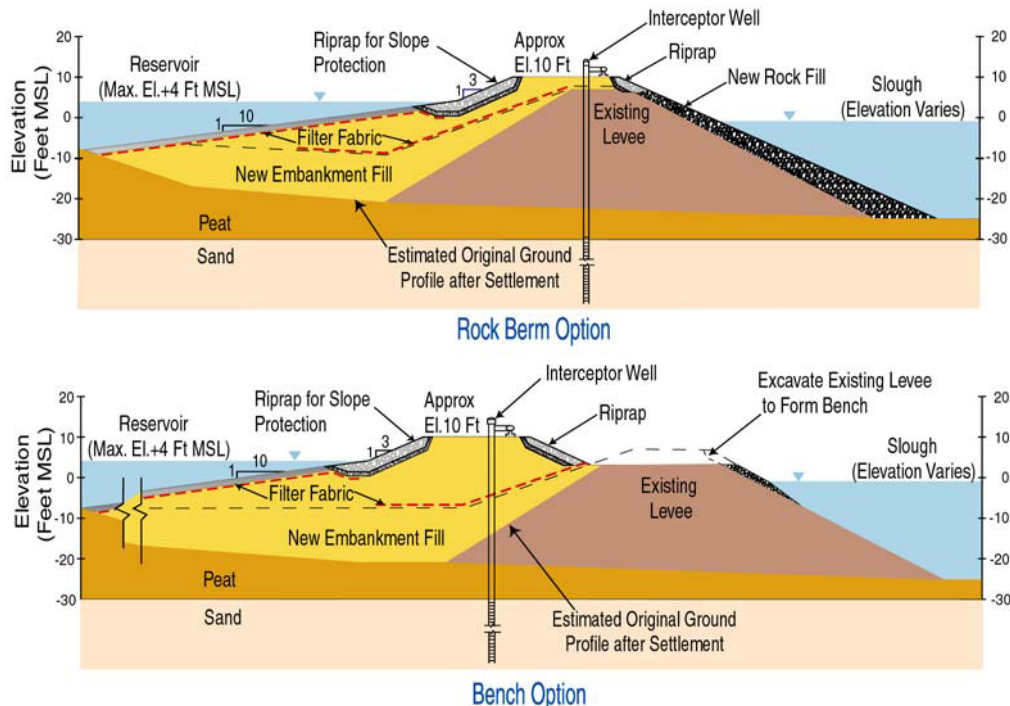
### **6.2 Seepage Control**

To prevent crop damage and increased pumping costs on adjacent islands, seepage measures are designed to prevent seepage rates onto adjacent islands from increasing beyond their current rate. Potential seepage control measures for In-Delta Storage islands include interceptor wells, slurry cut-off walls, reservoir floor clay blanket, and collector trenches/French drains in the neighboring islands. The study recommends using interceptor wells with pumps along the reservoir island embankments to control seepage on neighboring islands.

### **6.3 Piping Protection and Erosion Control**

A geotextile filter fabric measure was selected as a preferred solution to reduce the chance for piping (water flow through cracks in the embankments caused by foundation

settlement). The Independent Board of Consultants recommended some level of inboard side erosion protection over areas of vulnerability to wind and wave action. Prevailing winds will be the key forces driving inboard wave erosion potential. Based on a cost comparison to rip rap, soil cement with Bentonite mix is proposed on the shallow sloped reservoir-side north and west facing slopes for protection against wind and wave action.



**Figure 2: Rock Berm and Bench Options for Embankments**

#### 6.4 Risk Analysis

A risk analysis considered the risk and consequences of failure of the existing levees, In-Delta Storage re-engineered embankments and integrated facilities under operational, earthquake, and flooding events. DWR also estimated risk of loss-of-life and economic losses through uncontrolled releases from a failure during a time period when the reservoirs are expected to be full (April – June). The risk analysis concluded a minimal potential for loss-of-life and property damage.

The Independent Board of Consultants concluded that the project could be implemented at an acceptable level of risk. Their report noted that the seismic risk of implementation cannot be avoided, but is similar or better than all other projects already constructed in the Delta (e.g. Clifton Court Forebay and Delta Cross Channel).

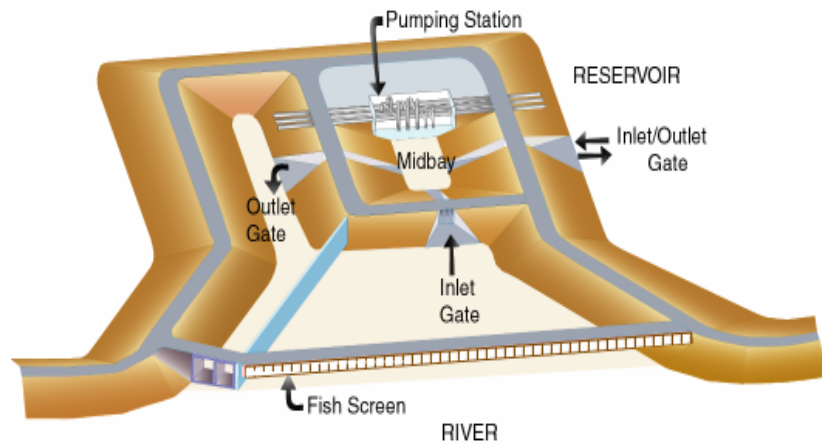
#### 6.5 Integrated Inlet and Outlet Facilities

The project design includes four integrated inlet and outlet facilities; two on Webb Tract and two on Bacon Island. These facilities would be used to control the diversion and release of water onto and off of the reservoir islands. The integrated facilities are consolidated control structures (Figure 3) that combine all operational components into

one facility. The goal of the integrated facility operations is to maximize gravity flow and minimize pumping to reduce operation and maintenance cost. The Central Valley Fish Facilities Review Team has approved the facility design concept and has recommended that a technical coordination team be set up for the detailed design.

## 6.6 Impact of Global Warming

The proposed embankments annual operations and maintenance costs include accommodating potential sea level rise due to climate change over the next 50 years assumed life period of the In-Delta Storage Project. Climate change may result in higher winter flows and reduced spring runoff. Operation studies indicate that the effect of climate change on In-Delta Storage operations would result in marginal change in water supplies.



**Figure 3: Typical Integrated Facility to Control Inflow and Outflow**

## 7.0 Water Quality

Protest Dismissal Agreements (PDAs) executed by Delta Wetlands Properties with CUWA, CCWD and EBMUD include a Water Quality Management Plan which will prevent release of water that would degrade the beneficial uses of Delta water. The PDA with CCWD protects Delta water quality by restricting diversions and discharges from the proposed reservoirs. The terms and conditions of these PDAs have been incorporated into D1643, but the PDAs themselves are independent agreements that apply to Delta Wetlands Properties and its successors. Additional measures to avoid and mitigate operational impacts will be developed in consultation with CUWA, CCWD and EBMUD as operational plans are developed. One important water quality issue is the effect of project operations on drinking water quality, especially organic carbon (OC) that could impact the urban water supply. Figure 4 is a conceptual model of the potential sources which could impact Delta water quality: peat, algae, aquatic plants, and seepage returns. Salinity, in particular bromide, a constituent of seawater, also affects urban water agencies ability to meet the U.S. EPA's safe drinking water regulations. In the last two years, DWR staff has conducted field investigations, water quality modeling, physical and conceptual models, and literature reviews to advance understanding of organic carbon loading and other water quality variables.

Physical models of the proposed reservoirs were created to study the ecological processes driving OC loading. These studies suggest that peat soil is likely to be the dominant OC



loading source in the reservoirs, at least in the first few years of project operation and may be longer.

While some uncertainty still exists in the specific levels of organic carbon that would be released from the reservoirs during project operations, modeling studies have indicated that OC concerns could be addressed through improved operations, including circulating fresh water through the reservoirs (see Draft Summary Report Studies 4a and 4b).

Additional water quality evaluations are also required to determine project impacts on dissolved oxygen and temperature.

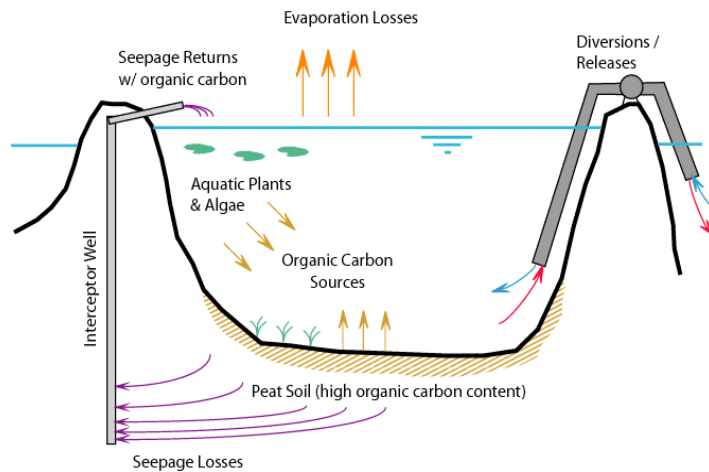


Figure 4: Conceptual Model Showing Organic Carbon Sources

## 8.0 Conclusions

- The Project construction and operation meet State feasibility requirements with an acceptable level of risk of structural failure and minimal potential for loss-of-life.
- Additional water quality field and modeling evaluations are necessary to refine project operations for organic carbon, dissolved oxygen and temperature. The recent studies indicate that circulating fresh water through the reservoirs could be effective mitigation to resolve the organic carbon issue. A final field investigations and modeling plan should be developed with recommendations from the CALFED Science Panel Review.
- The In-Delta Storage Project could provide significant improvement in the flexibility of Delta water operations.
- DWR estimates the equivalent annual cost for the In-Delta Storage Project at approximately \$60 million. The Department's preliminary benefits analysis conservatively values the annual water supply benefits at approximately \$23 to 26 million. This estimate is extremely sensitive to assumptions about the future cost and availability of other water management options (e.g., conservation, wastewater recycling, groundwater reclamation etc.) and should be refined in consultation with potential beneficiaries and economic experts. DWR estimates that an additional \$2 million in annual benefits would be associated with the recreation, flood damage reduction and avoided levee maintenance provided by the project. In addition, the project might provide other benefits, such as operational flexibility, water quality improvements, wildlife and habitat improvements and seismic stability. Before total project benefits and cost can be compared, value must be assigned to these benefits. The Department will work

with the Bay-Delta Public Advisory Committee and the California Bay-Delta Authority to gather input from interested parties before completing this benefits assessment.

## **9.0 Decision Process**

Before DWR can recommend appropriate next steps for the In-Delta Storage Project proposal, it is essential that all stakeholders, including potential project participants and affected parties, review the information provided in the draft report and provide feedback on the value of the benefits the project might provide relative to its costs, impacts and other project implementation issues. DWR is planning to follow the decision process as outlined below.

1. Release the In Delta Storage Program Draft Executive Summary and Summary Reports for public review. This will begin a 30-calendar day public review and comment period. See the California Bay-Delta Authority web page (<http://calwater.ca.gov/>) for the date public comments are due. See page iii for instructions on where to submit comments. Adherence to this schedule is essential in order to meet the briefing dates listed below.
2. DWR will sponsor two public workshops during the public review period to assist in the review of the In-Delta Storage Project Draft Feasibility Study Reports. One workshop will be held in Sacramento and the other will be held in Walnut Grove. See the CBDA web site (<http://calwater.ca.gov/>) for specific dates, times, and locations of the workshops. Briefings for specific stakeholder groups, organizations, commissions, and interested parties will be honored as time permits. Please contact Mr. Stephen Roberts, (916) 651-9249, for additional information.
3. DWR will brief the Bay-Delta Public Advisory Committee's Water Supply Subcommittee prior to the March 11, 2004 BDPAC meeting. See the CBDA website (<http://calwater.ca.gov/>) for the date time and location of the WSS meeting. The Department's briefing will lead to recommendation(s) on future steps from the subcommittee.
4. DWR and/or the Water Supply Subcommittee Chairs will brief the BDPAC at their March 11, 2004 meeting. Recommendation(s) on future steps will be made to the BDPAC for their consideration.
5. DWR and/or the BDPAC will brief the California Bay-Delta Authority at their April 8, 2004 meeting. Recommendation(s) on future steps will be made to the Authority for their consideration.
6. DWR will finalize the State Feasibility Study and implement additional steps in the In-Delta Storage Investigation based upon guidance from the CBDA.